Appendix A

GLOSSARY OF TERMS

AAR: Association of American Railroads. Sets standards for size, quality and performance of rolling stock and components used in interchange service.

AB Control Valve (including ABD, ABDW, etc.): Device mounted on each car to convert changes in brake pipe pressure to application or release of brakes.

Alternator: A form of generator that produces alternating current electricity.

Ampere: Unit of electric current. One volt applied across one ohm of resistance will produce one ampere of current. (Roughly analogous to gpm flow in a fire hose.)

Automatic Brake Valve: The device by which the locomotive engineer controls the pressure in the brake pipe and thus the application or release of the air brakes on the train.

Auxiliary Reservoir: An air storage tank located on each locomotive and car to supply air to the brake cylinder in response to operation of the AB valve. This occurs upon reduction of brake pipe pressure. On freight cars, the auxiliary and emergency reservoirs are housed in the two halves of a single tank.

Ballast: The bed of rock, cinders or slag that supports the ties on which the rails are mounted.

Battalion Chief: The senior officer in charge of a program or a geographical area with fire equipment and personnel.

Block Signal: A device for safely controlling the movement of trains by means of colored lights; red, green and yellow.

Brake Cylinder: A device mounted on each locomotive and car in which compressed air from the auxiliary or emergency reservoir acts on a piston which transmits the force to the brake shoes through the brake rigging.

Brake Cylinder Release Valve: A device for quickly releasing the air from a brake cylinder without affecting the rest of the brake system on the car.

Brake Head: A holder attached to or a part of the brake beam that carries the detachable brake shoe.

Brake Pipe: The system of piping extending the entire length of each locomotive and car, including hose and hose couplings, for the passage of air to control the air brakes.

Brake Shoe: A replaceable friction element secured to the brake head that is pressed against the wheel to produce retarding force. Two general types of brake shoe friction elements are used: *Composition High Friction and Cast /Iron Low Friction*.

Bunch Braking: A term used to describe the deceleration of a train by allowing the train to run in against the engine.

Caboose Valve: A device located on the caboose for applying air brakes on the train.

Carrier: A transportation company who carries products for hire. A receptacle or vessel for carrying objects.

Consist: A group of locomotives operating together as a unit and controlled from a single control stand.

Control Stand: The column upon which the throttle, brake and other controls and gauges are mounted within easy reach of the locomotive engineer.

Control Unit: The unit from which the engineer operates the locomotive consist or consists under his/her control, usually the lead unit.

Diesel Electric Locomotive: A locomotive in which power developed by a diesel engine is delivered through a generator or alternator to the traction motors on the axles.

Drawbar Forces: Longitudinal forces at the couplers between cars and/or engines that may be either tension (draft) or compression (buff), depending on the handling of the train at the time.

Duff: Dead leaves, needles or grass accumulated on the ground.

Dynamic Brake Interlock (DBI): A device installed on an engine automatically preventing the locomotive air brakes from applying when the automatic air brakes are set on the train during dynamic braking operation.

Dynamic Braking: An electrical means used to convert some of the power developed by the momentum of a moving engine into an effective retarding force. Electric circuits are set up which change the traction motors into generators. Since it takes power to rotate a generator, this action retards the speed of the train. The energy generated by the traction motors is fed to the resistor grids and dissipated as heat.

Emergency Application: A rapid, heavy exhausting of air from the brake pipe which results in maximum brake shoe pressure on the wheels of all cars and locomotives.

Emergency Reservoir: An air storage tank located on each car to supply air (in addition to that from the auxiliary reservoir) to the brake cylinder in response to operation of the AB valve upon emergency application. On freight cars, the auxiliary and emergency reservoirs are housed in the two halves of a single tank.

Engine: Often used interchangeably with "locomotive." Properly refers only to the diesel or steam primary source of mechanical energy.

Federal Railroad Administration (FRA): An agency of the U.S. Department of Transportation charged with overseeing and regulating matters relating to rail transportation and safety. Assumes most of the responsibilities of the Interstate Commerce Commission (ICC) insofar as railroads are concerned.

Fire Apparatus Engineer: A driver and operator of fire apparatus; a fire protection or fire prevention person qualified by credentials.

Fire Captain: A person in charge of a basic fire-fighting organizational unit consisting of firefighters and apparatus – company officer level and above.

Fire Hazard: The flammable materials that may be ignited by the various fire risks.

Fire Prevention: That part of the science of fire protection that deals with preventing the outbreak of fires by eliminating fire hazards through inspections, education, and investigation programs.

Fire Risk: A source of ignition of fire hazards.

Flange Lubricator: A track mounted device, used in areas of high curvature, to apply grease or oil to wheel flanges as they pass by in order to reduce track and flange wear.

Generator: A machine for converting rotational mechanical energy into electrical energy. The term applies to either the main generator of a locomotive when operating under motive power or to the traction motors when operating on dynamic brakes.

Grid: An electrical resistor capable of dissipating quantities of electrical energy as heat.

Helper: A manned locomotive, usually placed toward the rear of a train, to assist in the movement of the train.

Hot Box Detector: A trackside device that monitors the axle bearing temperatures of a passing train to detect incipient journal failures and thus prevent derailments.

Hyrailer: A single vehicle that can travel on the rails as well as the highway.

Independent Brake Valve: A valve that provides control of the locomotive air brakes regardless of the automatic brake valve handle position.

Main Reservoir: An air tank on the locomotive for storing and cooling compressed air.

Motor: A machine for converting electrical energy into mechanical energy.

Ohm: Unit of resistance to flow of electric current. One ohm of resistance requires one volt of energy to push one ampere of current across it. (Roughly analogous to friction loss in a fire hose.)

Rail Master: A railroad employee who is in charge of a rail line or a geographical area with rails for all maintenance of way.

RCE-1 Unit: A locomotive or consist separated from the lead consist and remotely controlled from the control unit.

Reduction (of the brake pipe): A decrease in brake pipe pressure at a rate and of an amount sufficient to cause a train brake application to be initiated or increased.

Release Rod: A small rod situated at the side sill of a car for the purpose of releasing the air brakes on that car by activating the brake cylinder release valve.

Retaining Valve (Retainer): A spring-loaded check valve or a restricting exhaust choke in series with the brake cylinder exhaust located on each car which, when turned to an operating position, will maintain a retarding force on car brakes on a descending grade while the brake pipe is being recharged.

Right-of-Way: The strip of land of varying width on which the tracks and other operating installations are placed and over which the operating company has some degree of control, by either deed, easement or special use permit.

Running Release: Release of automatic brake service application while the train is in motion.

Service Application: Exhausting the brake pipe at a service (normal, not emergency) rate to apply the train brakes.

Service Rate: The rate, slower than emergency, at which the brake pipe pressure is reduced by the engineer using the automatic brake valve to cause the control valve at each car to vent air from the auxiliary reservoir to the brake cylinder.

Siding: A section of track parallel to the main line track, with track switches at each end, on which a train or other rolling stock may be placed in order to open the mainline for passage of traffic.

Slash: Severed limbs and tops remaining after felling or pruning trees or brush.

Speeder: Railway Motorcar; small, 18 hp, 4 person car was used for maintenance.

Split Reduction: A brake pipe reduction less than the fully desired reduction followed by further light reductions until the desired total reduction is reached. Makes for a smooth slowdown or stop.

Stretch Braking: The deceleration of a train by application of the automatic brake while the locomotive is still working in reduced power.

Torpedo: An emergency impact-detonated signaling device that is placed on a rail to alert stationary and incoming trains that are on the same track. These devices are to be handled with caution.

Towpath: A narrow strip of the right-of-way adjacent to each side of the ballast that is normally kept clean enough for personnel to walk on.

Traction Motor: A device that converts electrical energy into mechanical energy which turns the locomotive wheels. It is mounted directly on each driving axle between the wheels of an engine truck.

Train Master: A railroad employee who is in charge of a locomotive or a system of many trains, responsible for all trains operating in jurisdictional area.

Truck: The system of frame, springs, plate, journals, wheels and axles that supports one end of a car or locomotive. Freight car trucks have two axles. Passenger car and locomotive trucks may have two or three axles.

Volt: Unit of electric energy force. One volt is required to push one ampere of current across one ohm of resistance. (Roughly analogous to psi of pressure in a fire hose.)

Watt: Unit of electric power equal to a current flow of one ampere under one volt of pressure; 746 watts equal one horsepower; 1,000 watts equal 1 kilowatt.